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Manual  
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**Engineering and Design**  
**RISK-BASED ANALYSIS FOR FLOOD DAMAGE REDUCTION STUDIES**

**1. Purpose.** This manual describes and provides procedures for risk and uncertainty for Corps of Engineers flood damage reduction studies.

**2. Applicability.** The guidance presented and procedures described in this manual apply to all HQUSACE elements, major subordinate commands, districts, laboratories, and separate field operating activities having civil works responsibilities.

**3. General.** The procedures described herein lead to estimation of expected benefits of proposed flood damage reduction plans using risk and uncertainty analysis. Quantitative and qualitative methods of representing the likelihood and consequences of exceedance of the capacity of selected measures are also included. The procedures are generally an extension and expansion of the traditional plan formulation and evaluation regulations described in other Corps of Engineers guidance materials, in particular ER 1105-2-101 and ER 1105-2-100, and thus do not supersede guidance presented therein.

FOR THE COMMANDER:



ROBERT H. GRIFFIN  
Colonel, Corps of Engineers  
Chief of Staff